

REMARKS

Please reconsider the application in view of the above amendments and the following remarks. Applicants thank the Examiner for carefully considering the application and indicating that the drawings filed November 14, 2003 are accepted.

Status of Claims

Claims 1-21 were pending in the application. Claims 7-9, 16, 18, and 21 are hereby cancelled without prejudice or disclaimer. Claims 22-24 are newly added. Accordingly, claims 1-6, 10-15, 17, 19-20, and 22-24 remain pending. Claims 1, 11, 20, and 22 are independent. The remaining claims depend, directly or indirectly, from independent claims 1 and 11.

Claim Amendments

Claims 1, 10, 11, and 20 are hereby amended to clarify aspects of the invention. Claims 22-24 are newly added. No new matter is added in the amendments or newly added claims. Support can be found, for example, in paragraphs [0022], [0025], [0026], [0030], [0033]-[0035], and [0038] of the specification as filed.

Rejections under 35 U.S.C. § 101

Claims 11-19 and 21 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. The rejection is moot regarding now-cancelled claims 16, 18, and 21. To the extent that the rejection may still apply to the remaining claims, the rejection is respectfully traversed.

Amended independent claim 11 recites, in part, “a processor” and “a memory associated with the processor,” where components of the system are resident in the memory and executing under control of the processor. A system having a processor and associated memory is clearly not software *per se*. Thus, amended independent claim 11 is directed statutory subject matter under 35 U.S.C. § 101. Claims 12-15 and 17 depend, directly or indirectly, from amended independent claim 11 and incorporate at least the same statutory subject matter. Withdrawal of the rejection is respectfully requested.

Rejections under 35 U.S.C. § 102

Claims 1, 2, 9, 11, 12, 16, and 18-21 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Publication 2002/0199172 A1 (“Bunnell”). The rejection is moot regarding now-cancelled claims 9, 16, 18, and 21. To the extent that the rejection may still apply to the remaining amended claims, the rejection is respectfully traversed.

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” Further, “[t]he identical invention must be shown in as complete detail as is contained in the ... claim.” MPEP § 2131. Applicants submit that Bunnell does not describe each and every element of amended independent claims 1, 11, and 20.

Amended independent claim 1 recites, in part:

registering an instrumentation provider with a tracing
framework;

...
selectively enabling the probe to obtain an enabled
probe,

wherein enabling the probe comprises assuring that control flow is transferred to the tracing framework when the enabled probe is fired, and
wherein enabling the probe is performed using a mechanism specific to the instrumentation provider;

...

transferring control flow to the tracing framework when the enabled probe is fired, wherein transferring control flow to the tracing framework is performed using the mechanism specific to the instrumentation provider; and
performing an action associated with the probe, wherein the action is performed by the tracing framework when control flow is transferred to the tracing framework.

Amended independent claims 11 and 20 include substantially similar limitations. In view of the above, to anticipate amended independent claims 1, 11, and 20, a reference must describe the instrumentation provider and tracing framework recited in the claims. The following is a brief description of the instrumentation provider and tracing framework, based on the limitations recited in the claims, when read in light of Applicants' specification.

As recited in the claims, the instrumentation provider and tracing framework are "disjoint." That is, the instrumentation provider is not a part of the tracing framework itself. Rather, the instrumentation provider is *registered* with the tracing framework. The instrumentation provider is configured to enable the probe so that control flow is transferred to the tracing framework when the probe is fired. The instrumentation provider enables the probe using a mechanism that is *specific to the instrumentation provider*. Thus, the tracing framework does not need to know or understand the specific mechanism by which the probe is enabled. The tracing framework merely registers the instrumentation provider that enables the probe. When the probe is fired and control flow is transferred to the tracing framework, the tracing framework performs the

action associated with the probe. In sum, the tracing framework provides functionality for registering the instrumentation provider and performing the action associated with the probe, while the instrumentation provider handles the details of enabling the probe. *See also* specification as filed, paragraphs [0022], [0025], [0030], [0033], and [0035].

Although Bunnell is generally directed to tracing, Bunnell does not describe the use of disjoint instrumentation providers, *i.e.*, instrumentation providers that separate the enabling of probes from the tracing framework itself. Instead, Bunnell describes a “trace environment” that includes a “trace driver.” The trace driver is responsible for dynamically instrumenting named routines in the target program. Further, the trace driver includes entry and exit trace process routines for recording trace event data. Thus, the trace driver includes functionality to both instrument the named routine and perform the actual tracing. *See, e.g.*, Bunnell, Figures 1-2 and paragraphs [0030], [0035], [0038], [0042], [0045], and [0048]. Because the trace driver includes both instrumentation and tracing functionality, the trace driver cannot possibly be equivalent to the disjoint instrumentation provider and tracing framework required by amended independent claims 1, 11, and 20. For example, it would not make sense for the trace driver to register itself with itself or to transfer control flow to itself.

In view of the above, Bunnell does not describe each and every element of amended independent claims 1, 11, and 20. Therefore, amended independent claims 1, 11, and 20 are patentable over Bunnell for at least the reasons given above. Claims 2, 12, and 19 depend, directly or indirectly, from amended independent claims 1 and 11, and are patentable over Bunnell for at least the same reasons. Withdrawal of the rejection is respectfully requested.

Rejections under 35 U.S.C. § 103

“Obviousness [under 35 U.S.C. § 103] is a question of law based on underlying factual inquiries.” MPEP § 2141. Specific factual inquiries for determining obviousness were laid out in *Graham v. John Deere Co. (Graham)*, 383 U.S. 1, 148 USPQ 459 (1966), and reiterated by the Supreme Court in *KSR International Co. v. Teleflex Inc. (KSR)*, 550 U.S. ___, 82 USPQ2d 1385 (2007). The factual inquiries include:

- (A) Determining the scope and content of the prior art;
- (B) Ascertaining the differences between the claimed invention and the prior art; and
- (C) Resolving the level of ordinary skill in the pertinent art.

“The question of obviousness must be resolved on the basis of these factual determinations. While each case is different and must be decided on its own facts, the *Graham* factors, including secondary considerations when present, are the controlling inquiries in any obviousness analysis.” MPEP § 2141.

Claims 4-8, 10, 13, 14, and 17

Claims 4-8, 10, 13, 14, and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bunnell in view of U.S. Publication 2004/0123279 A1 (“Boykin”). The rejection is moot regarding now-cancelled claims 7, 8, and 17. To the extent that the rejection may still apply to the remaining amended claims, the rejection is respectfully traversed.

As discussed above, Bunnell does not describe each and every element of amended independent claims 1 and 11. Further, Boykin does not supply what Bunnell lacks. In Boykin, probes are implemented as “hook methods” injected into class files. Probe information is stored in a

registry, and enabling a probe simply involves changing a setting in the registry to specify that the hook should be executed. *See, e.g.*, Boykin, paragraphs [0033]-[0038] and Table 7 (defining an interface to the registry, including an enableProbe function). In other words, Boykin provides a single integrated mechanism for managing probes, which is clearly not equivalent to the disjoint instrumentation provider and tracing framework required by amended independent claims 1 and 11.

In view of the above, independent claims 1 and 11 include significant non-obvious differences from the teachings of Bunnell and Boykin. Therefore, amended independent claims 1 and 11 are patentable over Bunnell and Boykin for at least the reasons given above. Claims 4-6, 10, 13, and 14 depend, directly or indirectly, from amended independent claims 1 and 11, and are patentable over Bunnell and Boykin for at least the same reasons. Withdrawal of the rejection is respectfully requested.

Claims 3 and 15

Claims 3 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bunnell in view of U.S. Publication 2003/0149960 A1 (“Inamdar”). To the extent that the rejection may still apply to the amended claims, the rejection is respectfully traversed.

As discussed above, Bunnell does not describe each and every element of amended independent claims 1 and 11. Further, Inamdar does not supply what Bunnell lacks. In Inamdar, a probe is injected into a compiled program using a “directive file.” The directive file specifies an available probe from a probe library, and a location where the probe should be inserted. An instrumentation engine reads the directive file and injects the specified probe at the given location. *See, e.g.*, Inamdar, abstract and paragraphs [0038]-[0040]. Thus, like Boykin, Inamdar provides a

single integrated mechanism for managing probes, which is clearly not equivalent to the disjoint instrumentation provider and tracing framework required by amended independent claims 1 and 11.

In view of the above, independent claims 1 and 11 include significant non-obvious differences from the teachings of Bunnell and Inamdar. Therefore, amended independent claims 1 and 11 are patentable over Bunnell and Inamdar for at least the reasons given above. Claims 3 and 15 depend directly from amended independent claims 1 and 11, and are patentable over Bunnell and Inamdar for at least the same reasons. Withdrawal of the rejection is respectfully requested.

Conclusion

Applicants believe this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 03226/348001; 040250).

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